## AMENDMENTS TO THE CLAIMS

The following is a complete, marked-up listing of revised claims with a status identifier in parenthesis, underlined text indicating insertions, and strike through and/or double-bracketed text indicating deletions.

### LISTING OF CLAIMS

1. (Currently Amended) A method for producing CT images of a partially cyclically moving examination object, comprising:

scanning the examination object in one pass by a spiral movement of at least one focus and at least one detector oppositely situated;

performing the scanning of the examination region at a relative feed rate between gantry and couch;

determining a three-dimensional image of absorption coefficients with the aid of a multiplicity of sectional planes of an examination volume on the basis of the data obtained by scanning;

determining at least one static object area and at least one at least partially moving object area with reference to the examination object with the aid of cyclical intrinsic movement, with a detection of the cyclical intrinsic movement of a subarea of the examination object performed in a current scanning area by comparing an intensity measurement of at least one pair of time-offset rays on a common ray axis, and with the determining performed during the scanning; and

using, during a pass when scanning the examination object, a relatively low feed rate upon the determining of the at least one at least partially moving object area, and using a relatively higher feed rate upon the determining of the at least one static object area.

2. (Cancelled)

3. (Currently Amended) The method as claimed in claim [[2]]1, wherein a position of a beating heart is determined in order to divide the examination object into the static and moving object areas.

4. (Cancelled)

5. (Previously Presented) The method as claimed in claim 20, wherein the determination of static and moving object areas before the scan is performed with subsequent manual subdivision of the areas.

6. (Previously Presented) The method as claimed in claim 1, wherein the transition between the feed rates is performed with a prescribed maximum acceleration.

7. (Cancelled)

8. (Cancelled)

9. (Previously Presented) The method as claimed in claim 1, wherein during scanning at a relatively low feed rate, the movement of the heart is temporally resolved by way of ECG leads and is divided into movement phases and rest phases, with only detected data from the rest phase being used to compile images.

10. (Previously Presented) The method as claimed in claim 1, wherein scanning uses

only detector data from a specific cycle rest phase of the cyclically moving area and uses all the measured detector data of the static area.

11. (Previously Presented) The method as claimed in claim 1, wherein an intensity of radiation emanating from the at least one focus is matched to a current feed rate.

12. (Previously Presented) The method as claimed in claim 11, wherein the intensity of radiation is matched by at least one of controlling and regulating a tube current.

13. (Currently Amended) A CT unit for scanning an at least partially cyclically moving examination object, comprising:

at least one focus from which a beam is emanated;

at least one detector of planar design, including a multiplicity of distributed detector elements for detecting the rays of the beam, the at least one focus being movable relative to the examination object with a feed rate on a spiral focal track revolving about the examination object;

means for determining a three-dimensional image of absorption coefficients with the aid of a multiplicity of sectional planes of an examination volume on the basis of the data obtained by scanning;

means for determining at least one static object area and at least one at least partially moving object area with reference to the examination object with the aid of cyclical intrinsic movement, with a detection of the cyclical intrinsic movement of a subarea of the examination object performed in a current scanning area by comparing an intensity measurement of two oppositely directed rays at two time instants, and with the determining performed during the scanning; and

means for using, during a pass when scanning the examination object, a relatively low feed rate upon the determining of the at least one at least partially moving object area, and using a relatively higher feed rate upon the determining of the at least one static object area.

14. (Previously Presented) The CT unit as claimed in claim 13, wherein said means are implemented at least partially by at least one of programs and program modules.

15. (Previously Presented) The CT unit as claimed in claim 13, wherein an apparatus is provided for controlling the feed rate as a function of scanning area.

16. (Previously Presented) The CT unit as claimed in claim 22, wherein the determination of static and moving object areas before the scan is performed with subsequent manual subdivision of the areas.

17. (Cancelled)

18. (Cancelled)

19. (Previously Presented) The CT unit as claimed in claim 14, wherein an apparatus is provided for controlling the feed rate as a function of scanning area.

20. (Currently Amended) A method for producing CT images of a partially cyclically moving examination object, comprising:

scanning the examination object in one pass by a spiral movement of at least one focus and at least one detector oppositely situated;

performing the scanning of the examination region at a relative feed rate between gantry and couch;

determining a three-dimensional image of absorption coefficients with the aid of a multiplicity of sectional planes of an examination volume on the basis of the data obtained by scanning;

determining at least one static object area and at least one at least partially moving object area with reference to the examination object with the aid of cyclical intrinsic movement, with a detection of the cyclical intrinsic movement of a subarea of the examination object performed in a current scanning area by comparing an intensity measurement of at least one pair of time-offset rays on a common ray axis, and with the determining performed ~~before~~during the scanning ~~by at least one topogram recording~~; and

using, during a pass when scanning the examination object, a first feed rate in the at least one moving object area and using a second feed rate in the at least one static object area.

21. (Cancelled)

22. (Currently Amended) A CT unit for scanning an at least partially cyclically moving examination object, comprising:

at least one focus from which a beam is emanated;

at least one detector of planar design, including a multiplicity of distributed detector elements for detecting the rays of the beam, the at least one focus being movable relative to the examination object with a feed rate on a spiral focal track revolving about the examination object;

means for determining a three-dimensional image of absorption coefficients with the aid of a multiplicity of sectional planes of an examination volume on the basis of the data obtained by scanning;

means for determining at least one static object area and at least one at least partially moving object area with reference to the examination object with the aid of cyclical intrinsic movement, with a detection of the cyclical intrinsic movement of a subarea of the examination object performed in a current scanning area by comparing an intensity measurement of two oppositely directed rays at two time instants, and with the determining performed ~~before~~during the scanning ~~by at least one topogram recording~~; and

means for using, during a pass when scanning the examination object, a first feed rate in the at least one at least partially moving object area and a second feed rate in the at least one static object area.

23. (Cancelled)

## REMARKS

Favorable reconsideration of this application, in light of the preceding amendments and following remarks, is respectfully requested.

Claims 1, 3, 5, 6, 9-16, 19-20 and 22 are pending in this application. By this Amendment claims 1, 3, 13, 20 and 22 are amended and claims 8, 18, 21 and 23 have been cancelled. No new matter is added. Claims 1, 13, 20, and 22 are the independent claims.

## Rejections under 35 U.S.C. § 112

Claim 3 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 3 has been amended to depend from claim 1. Applicants, therefore respectfully submit that the above rejection be withdrawn.

## Claim Amendments

Independent claims 1, 13, 20, and 22 are amended to include subject matter, respectively based upon that originally presented in claims 8, 18, 21 and 23. Additional non-narrowing amendments to the claims are made to place the claims in better U.S. form and not for any reason related to patentability.

## Rejections under 35 U.S.C. § 103

Claims 1, 3, 9-16, 19, and 22

Claims 1, 3, 9-16, 19, and 22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over US Patent Publication No. 2003/0163039 (hereinafter, "Pan") in

view of US Patent No. 5,046,003 (hereinafter, "Crawford"). Applicants respectfully traverse this rejection for the reasons detailed below.

Amended claim 1 recites *inter alia*, "**determining** at least one **static object** area and at least one at least partially **moving object**...**during the scanning**." The Examiner relies on Para. [0008] of Pan to disclose the above limitation. However, Para. [0008] of Pan only discloses "**acquiring data during imaging** of the cardiac scanning region and the at least one non-cardiac scanning region, and reconstructing an image based on the data acquired at differing table speeds." That is, Para. [0008] of **Pan does not disclose how the cardiac scanning region and non-cardiac scanning region are determined**. Instead, as noted in Applicants' February 2, 2008 response, Para. [0023] and Fig. 3 of Pan disclose that a "technician or CT scanner operator...provides input into the computer to define a set or regions to be scanned 102, **such as a cardiac scanning region and adjacent non-cardiac scanning regions** of a patient's thorax." Therefore, the cardiac and non-cardiac regions in Pan are **predetermined by the user *before* the scanning**. Hence, Pan fails to disclose "determining at least one static object area and at least one at least partially moving object...**during the scanning**," as recited in claim 1.

Amended claim 1 further recites *inter alia*, "determining at least one static object area and at least one at least partially moving object area with reference to the examination object with the aid of cyclical intrinsic movement, with a detection of the cyclical intrinsic movement of a subarea of the examination object performed in a current scanning area by **comparing an intensity measurement of at least one pair of time-offset rays on a common ray axis**, and with the determining performed ***during the scanning***." The Examiner admits that Pan fails to disclose the above underlined limitation. Instead, the Examiner relies on Col. 3, Ln. 18-39 of US Patent No. 6,421,552 (hereinafter, "Hsieh") to disclose the above limitation. However, as

disclosed at Col. 1, Ln. 62 – Col. 2, Ln. 3, Hsieh discloses **initially** "**scanning** the object with the CT imaging system so as to acquire conjugate data samples" and **then** "**analyzing** the conjugate data samples to remove data representative of overlapping, non-moving portions of the object." Similarly, Col. 3, Ln. 7-45 of Hsieh is disclosed to **first** "**collect** data samples, including conjugate data samples." **Then**, the "conjugate projection samples are **analyzed** to remove all overlapped structures." That is, **Hsieh only analyzes the data *after* scanning the entire examination object.** Thus, **Hsieh does not analyze the data *during* the scanning of the examination object**. As such, Hsieh fails to disclose "**comparing an intensity measurement of at least one pair of time-offset rays on a common ray axis**, and with the determining performed ***during the scanning***," as recited in claim 1.

Moreover, as neither Pan nor Hsieh determine the cardiac and non-cardiac regions **during the scan**, Pan and Hsieh also fails to disclose **changing the feed rate *during the scan* in response to *detecting* cardiac and non-cardiac regions**. That is, Pan and Hsieh also fail to disclose using "a relatively **low feed rate upon the determining** of the at least one at least partially **moving object area**, and using a relatively **higher feed rate upon the determining** of the at least one **static object area**," as recited in claim 1.

For at least the foregoing reasons, claim 1 is patentable over Pan. Even assuming *arguendo* that Pan and Crawford are combinable (which Applicants do not admit), Crawford still fails to remedy the deficiencies of Pan with respect to claim 1. In addition, as shown above, Hsieh also fails to remedy the deficiencies of Pan with respect to claim 1. Independent claims 13 and 22 are at least somewhat similar to claim 1 and therefore patentable for at least somewhat similar reasons. Dependent claims 3, 9-16, 19 and 22 are at least patentable by virtue of their dependency on one

of independent claims 1 and 13. Applicants, therefore, respectfully request that the rejection to the above claims under 35 U.S.C. § 103(a) be withdrawn.

Claim 8

Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pan and Crawford as applied to claim 1 above, and in further view of US Patent No. 6,421,552 (hereinafter, "Hsieh"). As claim 8 has been cancelled, Applicants respectfully request that the rejection to the above claim under 35 U.S.C. § 103(a) be withdrawn.

Claim 18

Claim 18 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pan and Crawford as applied to claim 13 above, and in further view of Hsieh. As claim 18 has been cancelled, Applicants respectfully request that the rejection to the above claim under 35 U.S.C. § 103(a) be withdrawn.

Claim 21

Claim 21 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pan, Crawford, US Patent No. 6,023,494 (hereinafter, "Senzig"), and US Patent Publication No. 2003/0092983 (hereinafter, "Baker") as applied to claim 20 above, and in further view of Hsieh. As claim 21 has been cancelled, Applicants respectfully request that the rejection to the above claim under 35 U.S.C. § 103(a) be withdrawn.

Claim 23

Claim 23 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pan and Crawford as applied to claim 22 above, and in further view of Hsieh. As claim 23

has been cancelled, Applicants respectfully request that the rejection to the above claim under 35 U.S.C. § 103(a) be withdrawn.

Claims 20 and 5

Claims 20 and 5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Pan, Crawford, Senzig, and in further view of Baker. Applicants respectfully traverse this rejection for the reasons detailed below.

Even assuming *arguendo* that Pan, Crawford, Senzig, and Baker are combinable (which Applicants do not admit), Baker still fails to remedy the deficiencies of Pan, Senzig and Crawford with respect to claim 20. For example, the "**scout scan**," disclosed at Para. [0030] of Baker, is a "**preliminary scan" performed *before* "the subsequent actual CT scan**." Similarly, Col. 6, Ln. 44-45 of **Senzig also discloses using a "scout view" before scanning**. Thus Baker and Senzig both fail to disclose "determining at least one static object area and at least one at least partially moving object area with reference to the examination object with the aid of cyclical intrinsic movement...**during the scanning**," as recited in amended claim 20. For these reasons and more, independent claim 20 is at least somewhat similar to claim 1 and therefore patentable for at least somewhat similar reasons. Dependent claim 5 is at least patentable by virtue of its dependency on independent claim 1. Applicants, therefore, respectfully request that the rejection to the above claims under 35 U.S.C. § 103(a) be withdrawn.